

Remarks

Claims 1-11 are pending in the subject application. By this Amendment, Applicant has canceled claims 4-6, amended claims 1, 3, and 7-9, and added new claims 12-24. Support for the amendments and new claims can be found throughout the subject specification and in the claims as originally filed. Entry and consideration of the amendments presented herein is respectfully requested. Accordingly, claims 1-3 and 7-24 are currently before the Examiner. Favorable consideration of the pending claims is respectfully requested.

Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as indefinite in the recitation of “said fluid operation” and “normally.” Applicant respectfully asserts that the claim as filed is definite. However, in an effort to expedite prosecution, claim 1 has been amended to provide antecedent basis for the phrase “said fluid operation” and delete the word “normally.” Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Claims 1, 2, 4-6, 10, and 11 are rejected under 35 U.S.C. § 102(a) as being anticipated by Thurow (U.S. Patent No. 4,783,441). Applicant notes that it appears that this rejection should have been made under 35 U.S.C. § 102(b) and not § 102(a). Regardless, Applicant respectfully asserts that the Thurow patent does not anticipate the claimed invention. The Office Action states that the patent teaches a reaction mixture comprising a surface acting polymer in a buffer solution to prevent adsorption of dissolved organic material to a surface. Applicant respectfully submits that the patent fails to anticipate the claimed invention. Particularly, the patent fails to teach a surface adsorbing polymer binds non-covalently to a surface and has a molecular weight of at least 5×10^4 daltons. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(a) or (b) is respectfully requested.

Claims 1, 2, 10, and 11 are rejected under 35 U.S.C. § 102(a) as being anticipated by Parce *et al.* (U.S. Published Patent Application No. 2005/0238545). The Office Action indicates that the Parce *et al.* application teaches an “operation control reagent” comprising a surface adsorbing polymer in a buffered solution to prevent the adsorption of organic material on microchannel surfaces and that such a reaction mixture is not involved in a reaction of interest. A review of Parce *et al.* shows that “operation control reagent” referenced by the Examiner is not the same as the

“reaction mixture” of the subject application. In fact, Parce *et al.* teach that their operation control reagents are “particularly useful in performing serially oriented microfluidic analyses” (page 2, [0014]), wherein the “operation control reagent” is introduced *separately* from the analytes, *i.e.*, the reaction mixture. Conversely, the subject application specifically claims a surface adsorbing polymer, comparable to Parce *et al.*’s “operation control reagent”, as part of a reaction mixture. Still further, Parce *et al.* teach that such operation control reagent is introduced into a microchannel device under reduced pressure and/or increased temperature to aid in absorption of undesirable gasses formed within a microchannel structure. This appears to confirm that the operation control reagent must be introduced serially and not as part of a reaction mixture, as claimed in the subject application. Further, Parce *et al.* unambiguously teach that the “surface modifying reagent can be introduced in a separate fluid region that is flowed through the channel before and/or after the reaction fluid region” (see, *e.g.*, paragraph 020 of Parce *et al.* [emphasis added]). This is confirmed by claim 1 of Parce *et al.*, which clearly states that the “environmental control reagent” (which appears to correspond to a composition comprising surface modifying reagent as discussed at paragraphs 17-23) and the reaction mixture are two separate volumes of fluids, said fluids being introduced sequentially into the channel of the microfluidic device. Thus, it is respectfully submitted that Parce *et al.* neither teach nor suggest the addition of a surface modifying reagent directly to a reaction fluid that contains a biomolecule and the reference fails to teach a surface adsorbing polymer binds non-covalently to a surface and has a molecular weight of at least 5×10^4 daltons. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(a) is respectfully requested.

Claims 3-9 are rejected under 35 U.S.C. § 103(a) as obvious over Parce *et al.* (U.S. Patent Application No. 2005/0238545) in view of Voss *et al.* (U.S. Patent No. 6,706,162). The Office Action argues that Parce *et al.* teach an “operation control reagent” comprising a surface adsorbing polymer in a buffered solution to prevent the adsorption of organic material on microchannel surfaces and that such a reaction mixture is not involved in the reaction of interest. The Office Action notes that Parce *et al.* is silent with respect to the molecular weight of a surface adsorbing polymer and relies on Voss *et al.* to cure this deficiency. Applicant respectfully asserts that the claimed invention is not obvious over the cited references. As noted above, Parce *et al.* teach

operation control reagents that are “particularly useful in performing serially oriented microfluidic analyses” (page 2, [0014]), wherein the “operation control reagent” is introduced *separately* from the analytes, *i.e.*, the reaction mixture. Parce *et al.* also teach that such operation control reagent is introduced into a microchannel device under reduced pressure and/or increased temperature to aid in absorption of undesirable gasses formed within a microchannel structure and that the operation control reagent is not part of the reaction mixture. Notably, Parce *et al.* fail to teach the addition of a surface modifying reagent directly to a reaction fluid that contains a biomolecule that is to be used in fluid operation. Applicant respectfully submits that the teachings of Voss *et al.* do not cure the deficiencies of Parce *et al.* Accordingly, it is respectfully submitted that the cited combination of references fails to establish a *prima facie* case of obviousness for the claimed invention and reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

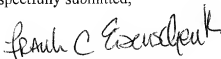
It should be understood that the amendments presented herein have been made solely to expedite prosecution of the subject application to completion and should not be construed as an indication of Applicant’s agreement with or acquiescence in the Examiner’s position. Applicant expressly reserves the right to pursue the invention(s) disclosed in the subject application, including any subject matter canceled or not pursued during prosecution of the subject application, in a related application.

In view of the foregoing remarks and amendments to the claims, Applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

Applicant invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



Frank C. Eisenschenk, Ph.D.

Patent Attorney

Registration No. 45,332

Phone No.: 352-375-8100

Fax No.: 352-372-5800

Address: P.O. Box 142950
Gainesville, FL 32614-2950

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